# Raluca M. Sandu

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## EXPERIENCE

**Accenture**                                                                                           Zurich, Switzerland
Machine Learning Engineer                                                                                June 2022–current
- Focusing on rapid prototyping and development of solutions for business use cases
- Building innovative applications using Large Language Models (LLMs), Stable Diffusion and Computer Vision

**CSL Behring AG**                                                                                        Bern, Switzerland
Senior Scientist & Technical Expert                                                                       May 2021–Jan 2022
- Programmed automated data quality controls and statistical analyses for streamlining pharmaceutical processes

**University of Bern**                                                                                    Bern, Switzerland
PhD Researcher at ARTORG Center for Biomedical Engineering Research                                       May 2017–Feb 2021
- Developed image processing and computer vision methods for improving evaluation of liver cancer treatments
- Collected, processed and analyzed big data from 100 patients part of a European clinical trial (Python, R)

**Philips Research, Personal Care and Wellness**                                                    Eindhoven, Netherlands
Internship and MSc graduation project in Image Analysis and Computer Vision                              Apr 2016–Mar 2017
- Designed and developed a web application for image annotation (Python, JS, HTML and CSS)
- Applied machine learning algorithms for skin classification with 98% accuracy

## EDUCATION

**PhD in Biomedical Engineering**                                                                         Bern, Switzerland
University of Bern                                                                                        May 2017–May 2022
- Thesis: "Quantitative assessment of ablation treatments for liver tumours – image-based efficacy analysis and predictive modelling". Project part of a Marie Skłodowska-Curie European grant: https://hipernav.eu/

**MSc in Biomedical Engineering**                                                                          Aachen, Germany
RWTH Aachen University                                                                                    Oct 2014–Apr 2017
- Thesis: "Image Segmentation and Semantic Description: Tools and Analytics". Grade 100%.

**BSc in Control Engineering Systems and Applied Computer Science**                                      Bucharest, Romania
Politehnica University of Bucharest                                                                       Oct 2010–Jul 2014
- Thesis: "Volumetric Capnography Respiratory Signals for Spontaneously Breathing Subjects". Grade 100%.

## TECHNICAL SKILLS

- **ML & Deep Learning:** Computer Vision, NLP, LLM
- **Python:** NumPy, Pandas, Scipy, Scikit-learn, OpenCV, Matplotlib, Jupyter, PyTorch
- **R:** RShiny, Tidyverse, ggplot2
- **Cloud:** AWS (Sagemaker, Notebook, IAM, CLI)
- **OS**: Windows, MacOS, Linux

## LANGUAGES

- **English:** C1 level - Cambridge ESOL Level 2 Certificate in Advanced English (CAE), Grade 100%
- **German:** B2 level
- **French:** B1 level
- **Spanish and Italian:** Basic level

## Publications

[1] **R.-M. Sandu**, I. Paolucci, S. J. S. Ruiter, R. Sznitman, K. P. de Jong, J. Freedman, S. Weber, and P. Tinguely, "Volumetric quantitative ablation margins for assessment of ablation completeness in thermal ablation of liver tumours", *Frontiers in Oncology*, vol. 11, 2021, Publisher: Frontiers, ISSN: 2234-943X. DOI: 10.3389/fonc.2021.623098.

[2] D. Stillström, **R.-M. Sandu**, and J. Freedman, "Accuracy of electrode placement in ire treatment with navigated guidance", *CardioVascular and Interventional Radiology*, 2021, ISSN: 1432-086X. DOI: 10.1007/s00270-020-02762-5.

[3] I. Paolucci, **R.-M. Sandu**, P. Tinguely, C. Kim-Fuchs, M. Maurer, D. Candinas, S. Weber, and A. Lachenmayer, "Stereotactic image-guidance for ablation of malignant liver tumors", in *Liver Cancer*, IntechOpen, Oct. 2019. DOI: 10.5772/intechopen.89722.

[4] **R.-M. Sandu**, I. Paolucci, J. Freedman, P. Tinguely, S. J. S. Ruiter, and S. Weber, "Quantitative volumetric assessment of percutaneous image-guided microwave ablations for colorectal liver metastases", in *31st Conference of the International Society for Medical Innovation and Technology (iSMIT)*, Heilbronn, Germany, Oct. 2019.

[5] **R.-M. Sandu**, I. Paolucci, J. Freedman, P. Tinguely, and S. Weber, "Quantitative volumetric assessment of ct-guided ablation treatments for colorectal liver metastases", in *IEEE Engineering in Medicine and Biology Society (EMBS) International Student Conference (ISC)*, Magdeburg, Germany, Nov. 2019.

## Extracurricular Activities

- Hobbies: Board games, English book club reading, snowboarding, skiing, surfing, tennis